

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

100011

22/F, Great Eagle Centre, 23 Harbour  
Road, Wanchai, HONG KONG, P.R.China  
CHINA PATENT AGENT (H.K.) LTD

## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43 *bis*.1)

Date of mailing

(day/month/year) 26 · OCT 2006 (26 · 10 · 2006)

Applicant's or agent's file reference

FPEL05150068

**FOR FURTHER ACTION**

see paragraph 2 below

International application No.

PCT/CN2005/002304

International filing date (day/month/year)

23.Dec 2005(23.12.2005)

Priority date (day/month/year)

International Patent Classification (IPC) or both national classification and IPC

G06F15/16(2006.01)i

Applicant

INTEL CORPORATION et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

#### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1*bis*(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/CN

The State Intellectual Property Office, the  
P.R.China 6 Xitucheng Rd., Jimen Bridge,  
Haidian District, Beijing, China 100088  
Facsimile No. 86-10-62019451

Date of completion of this opinion

18.Sep 2006(18.09.2006)

Authorized officer

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Telephone No. 86-10-62084944

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/CN2005/002304

Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed  
☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper  
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed  
☐ filed together with the international application in electronic form  
☐ furnished subsequently to this Authority for the purposes of search

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/CN2005/002304

**Box No. V**      **Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Statement:**

Novelty (N)	Claims <u>1-39</u>	YES
	Claims <u>none</u>	NO
 Inventive step (IS)	Claims <u>1-39</u>	YES
	Claims <u>none</u>	NO
 Industrial applicability (IA)	Claims <u>1-39</u>	YES
	Claims <u>none</u>	NO

**2. Citations and explanations**

(1) The documents cited in the search report have been taken into consideration here:

D1: CN1012131A

D2: JP58195254A

D3: US6799195B1

(2) D1 discloses that the virtual machine system includes at least one VM running under control of a program, the system having a direct and indirect I/O execution modes. The control system includes an arrangement to identify the I/O device requesting switching to the direct I/O execution mode, an arrangement for judging a predetermined mode switching condition and a mode selector. The identification arrangement identifies the I/O device requesting switching to the direct I/O execution mode and if the VM which contemplates the direct execution has not yet dedicated the I/O device requesting the mode switching when the identified I/O device meets the mode switching condition as judged by the judging arrangement, the VM dedicates that I/O device. If the VM has not yet dedicated an I/O interrupt subclass which controls the I/O interruption of that I/O device, the VM dedicates that I/O interrupt subclass and the VM switches the mode of the I/O device by the mode selector from the indirect mode to the direct mode.

D2 discloses the following contents: to report quickly the end of an input/output operation, a data controller reports the end of the input/output operation directly to a virtual computer input/output end controlling process on a virtual machine by a virtual machine identifier and etc. A communication area where the virtual machine identifier, a virtual computer input/output end controlling process identifier, etc. are set is provided in a fixed area on a main storage device 1. When a CPU3 detects an input/output instruction during execution of the virtual system, the virtual machine identifier, the virtual computer input/output end controlling process identifier, etc. are communicated to a data controller 4 through this communication area. The data controller 4 can report the end of the input/output operation directly to the virtual computer input/output end controlling process on the virtual machine by both identifiers. Thus, the end of the input/output operation is reported quickly, and the execution time of the virtual system is shortened to improve the performance.

D3 discloses that the system includes a network coupled to a server digital data processor (16) to process control apparatus. The processor has a command processor for transferring information between the network and the process control apparatus. A client processor is coupled to the network (18) having an information client for establishing communications with the server processor over the network. It generates and transmits to the server processor a request for an applet, and receives it from the server, and defines a virtual machine environment for its execution. The client processor executes the applet (26 and 28) in the virtual environment, and the applet configures the client processor as a process controller to establish communications over the network with the command processor and to monitor and control the process control apparatus via those communications.

It is obvious that not all the technical features in claims 1-39 are disclosed by D1, D2 or D3, and further the technical solutions claimed are not obvious to a person skilled on the basis of D1, D2, D3 or their combination. Thus, claims 1-39 have novelty under PCT Article 33(2), and have inventive step under PCT Article 33(3);

(3) Claims 1-39 have industrial applicability under PCT Article 33(4), because the technical scheme claimed can be made or used in the industry.